

## ABSTRACT OF THE DISCLOSURE

A device for filtering electrical signals has a number of inputs arranged spatially at a distance from one another and supplying respective pluralities of input signal samples. A number of signal processing channels, each formed by a neuro-fuzzy filter, receive a respective plurality of input signal samples and generate a respective plurality of reconstructed samples. An adder receives the pluralities of reconstructed samples and adds them up, supplying a plurality of filtered signal samples. In this way, noise components are shorted. When activated by an acoustic scenario change recognition unit, a training unit calculates the weights of the neuro-fuzzy filters, optimizing them with respect to the existing noise.

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